REMARKS

This is in response to the official action dated February 21, 2003. Reconsideration in view of the following is respectfully requested.

The claims have been amended throughout to provide for greater clarity, and to more clearly define the structural relationship among the various elements.

Further, claim 1 has been amended to recite details of the detector means and a means for independently adjusting flow.

The examiner writes as to claims 1-21. However, the claims per the PCT IPER Annex are claims 1-17. The translation of the annexed claims was submitted with the entering of the national stage, and the preliminary amendment related to this version of claims 1-17. Therefore, this latter version is the present claim set. Applicant's current amendment and argument relates to this set as well.

Because of the differing claim numbering used by the examiner, applicant will address the cited references in general as applied to the present claims.

None of the presently amended claims are obvious, or anticipated, by either Stalling or Safir, or a combination of the two. Neither Stalling nor Safir teach a flow control system which comprises, separately for each line, a flow controller, total pressure meter and flow meter; nor a means for or step of

measuring the retention time and then adjusting the retention time so that it is the same in each line, by way of the flow controller based on data from the flow meter and total pressure meter in each line. The result is that applicant's device allows for multiple parallel separation of a sample under identical conditions (retention time), notwithstanding any individual differences in the parallel lines or columns. Nowhere do the cited references recognize this important issue, and therefore they can provide no suggestion for this advance. Accordingly, the rejection should be withdrawn.

Respectfully Submitted,

Bruce S. Londa
Attorney for Applicant
Norris, McLaughlin & Marcus P.A.
220 East 42nd Street, 30th Floor
New York, N.Y. 10017
Telephone: (212)808-0700
Telecopier: (212)808-0844

Claims

1. (presently amended) An apparatus for the liquid chromatographic separation of substances under pressure, ~~for which at least~~comprising

a plurality of ~~several~~ liquid chromatographic separating lines ~~(17),~~ which are disposed in parallel, ~~are supplied by~~

a single pumping unit in the form of one or two pumps ~~(3, 4)~~ for supplying a liquid to the separating lines ~~and, in the region, when the samples are supplied, are combined with a~~

a sample holding system for holding a plurality of samples and allowing simultaneous parallel withdrawal of the samples, ~~(5) and~~

an injection system ~~(18)~~ for parallel transport of the samples from the sample holding system and a liquid from corresponding separating lines to corresponding parallel separating columns ~~as well as, in the detection region, with a detector (13)~~

~~, connected with an evaluation and control unit (16),~~

wherein ~~the liquid chromatographic~~each of the separation lines ~~(17) have~~has a separate flow control unit ~~(10, 12, 12.1, 19), the flow regulating units (10, 12, 19) consisting of~~ comprising a flow controller ~~(10.1 - 10.8)~~, a total pressure meter ~~(19)~~ and a flow meters ~~(12.1 - 12.8)~~, wherein the flow controller is disposed upstream of the injection system,

a detector means connected to an evaluation and control unit for determining retention time for each of the

separating columns based on data from the corresponding flow meter and total pressure meter, and

means for independently adjusting flow via the corresponding flow controller in each of the separation lines based on the detected retention time, such that an actual retention time in all of the separating columns may be rendered the same.

2. (presently amended) The apparatus of claim 1, wherein the flow regulating units ~~(10, 12, 19)~~ in each of the separating lines ~~(17)~~ can be controlled by software and/or hardware.

3. (canceled)

4. (canceled)

5. (canceled)

6. (presently amended) The apparatus of claim 1, wherein the total pressure meter ~~(19)~~ is disposed on the output side of the pump ~~(3, 4)~~.

7. (presently amended) The apparatus of claim 1, wherein the sample holding system ~~(5)~~ is connected with at least several parallel sample holding lines over at least several corresponding injection ports ~~(6)~~ and

wherein the injection system comprises injection valves ~~(9)~~ and sample loops ~~(7) of the multi-parallel injection system (18)~~ which are connected with ~~at least several~~ corresponding separating columns ~~(11.1 to 11.8)~~, ~~which are~~ the separating columns being coupled with ~~a~~ the

retention time detector, ~~(13), which~~ the retention time detector comprising a plurality of ~~has several~~ determination channels.

8. (presently amended) The apparatus of claim 1, wherein the separating columns ~~(11.1 to 11.8)~~ are combined compactly into a battery of separating columns ~~(11)~~.

9. (presently amended) The apparatus of claim 1, wherein each injection valve ~~(9)~~ is disposed ~~before the~~upstream of the corresponding separating column~~s (11.1 to 11.8)~~.

10. (presently amended) The apparatus of claim 1, wherein each injection valve ~~(9)~~ is constructed as a multiple way valve.

11. (presently amended) The apparatus of claim 1, wherein each injection valve ~~(9.1 to 9.8)~~ has switching ~~possibilities~~ means capable of directing flow to an injection port ~~(6)~~, ~~to~~ a sample loop ~~(7)~~, ~~to~~ the pumps ~~(3, 4)~~, ~~to~~ a waste collector ~~(8) and to~~or ~~a~~one of the separating column~~s (11.1 to 11.8)~~.

12. (presently amended) The apparatus of claim 1, wherein each of the separating lines ~~(17.1 to 17.10) have~~ has a corresponding separating column and ~~and~~ a corresponding solid phase extraction unit ~~(13),~~ which ~~are~~ extraction unit is coupled with ~~further~~a second set of one or two pumps ~~(21, 22)~~.

13. (presently amended) The apparatus of claim 12, wherein a multiple way valve, which can be connected with the solid phase extraction unit ~~(23)~~, ~~the~~ a multi-parallel fraction output unit ~~(24) and the~~ or a waste collector ~~(14)~~, is disposed in ~~the~~an end region of the solid phase extraction unit ~~(23)~~.

14. (presently amended) The apparatus of claim 12, wherein ~~the~~ each solid phase extraction units ~~(23)~~ ~~have~~has at least two fractionating columns ~~each~~.

15. (presently amended) The apparatus of claim 12, wherein each of the solid phase extraction units ~~(23)~~ ~~have~~has between 10 and 50 fractionating columns.

16. (presently amended) A method for the liquid chromatographic separation of substances under pressure, comprising the steps of, in order:

~~for which several samples, which are to be separated, are~~ supplied~~ying~~ simultaneously a plurality of samples to a~~t least several~~plurality of corresponding separating columns by way of a plurality of corresponding separating lines ~~(11)~~ ~~and~~, ~~subsequently,~~

taking a calibration sample, ~~a detection and selection takes place~~ simultaneously and in parallel, from each of the separating lines, and determining ~~wherein the~~a retention time for each of the separating columns,

~~separating lines (17) are~~ calibrate~~d~~ing each of the separating lines based on the respective determined retention time and adjusting flow in each separating line ~~with respect to the retention times by means of a calibration sample and, after the individual retention~~

~~times have been determined, are adjusted to the same retention time by control with~~by way of a flow ~~regulators~~controller ~~(10)~~ on the basis of data from a flow meters ~~(12)~~ and an initial pressure meters ~~(19)~~, wherein the ratio of the total pressure to the volume flow to the respective separating line is used as actual value for indirectly controlling the volume flow, wherein the flow controller is disposed upstream of the separating columns.

17. (canceled)